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BUREAU OF BEES

AMERICAN BEE JOURNAL

46th Year.

CHICAGO, ILL., JAN. 4, 1906.

No. 1.

"The Parting" or Farewell to 1905

BY EUGENE SECOR

Good-bye, Old Year!
I would that you could tarry here.
My heart exclaims, "Old friends are best"—
It holds them dear above the rest.

Good-bye, Old Year!
I say the words with many a fear;
When you are gone another one
Of life's unraveled threads is gone.

Good-bye, Old Year!
Thus some we hold in life most dear
Slip outward through the door, and stay,
Heedless of tears, both you and they.

I'm older now than when you came—
And wiser! Ah, how low my aim!
But wisdom comes through many a sigh—
Old Year, good-bye!

Good-bye, Old Year!
Your lusty rival standeth near;
But I am loth to see you die—
Old Year, good-bye! good-bye!



View of "Washington Apiary" from the North.
One of the Government Apiaries at Washington, D. C.—(See page 6.)

THE AMERICAN BEE JOURNAL

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

334 Dearborn Street, Chicago, Ill.

IMPORTANT NOTICES

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- 2d.—To protect and defend its members in their lawful rights.
- 3d.—To enforce laws against the adulteration of honey.

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(INCORPORATED)

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THE A. I. ROOT COMPANY, Medina, Ohio

ESTABLISHED IN 1861

THE AMERICAN BEE JOURNAL

OLDEST BEE-PAPER IN AMERICA

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter)

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GEORGE W. YORK, Editor

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Editorial Notes and Comments

Position of Winter Hive-Entrances

At the present day nearly all entrances to hives in this country are directly upon the floor or bottom-board. Formerly entrances were higher up, and indeed such entrances are still by no means uncommon in other countries. It is likely that entrances were lowered not so much because better for the bees as because more convenient for the hive-maker.

True, it is easier for the bees to carry out their dead through a low entrance, but it is equally true that it is easier for the low entrance to become clogged in winter. In view of the fact that the chief argument against small entrances is the danger of clogging, may it not be in order to reconsider the advisability of having entrances so low down?

Sugar Cakes for Winter Feeding of Bees

In the Modern Farmer, Editor Emerson T. Abbott gives the following directions for making and feeding sugar cakes to bees in winter:

We have had a number of inquiries about sugar cakes for bees. . . . We find by inquiry and observation that a great many colonies in this locality are short of stores. The same conditions may prevail elsewhere, and we advise all of our readers to examine their bees at once, as there is sure to be a great fatality among them this winter if they are not properly looked after. Do not try to feed them liquid feed now.

If the bees have been left without looking after them, and making sure they have plenty of food, the best plan of procedure is as follows:

Secure a high grade of granulated sugar. Dissolve the sugar in boiling water, put in as little water as possible, but enough to dissolve the sugar thoroughly and make a thick syrup. This syrup should be boiled, being very careful not to let it burn, as burnt sugar is injurious to bees. Boil the syrup until it will harden and mold into a small cake. By dropping a little of the hot syrup in cold water one can easily tell when it has boiled enough. When the syrup solidifies quickly in the cold water, then proceed to mold it into cakes weighing from 5 to 8 pounds each. This can be done by pouring the syrup into a bread-pan or something of that kind. A cake of sugar that is 5 inches wide and 7 or 8 inches long is about the proper shape for use for winter. The cake should be at least $1\frac{1}{2}$ inches thick; 2 inches would probably be better.

As soon as the weather turns cold and the bees have clustered, carefully remove the honey-board or hive-cover, and lay this cake of sugar directly over the cluster of bees. It is better to put a few short sticks, say $\frac{1}{2}$ inch square, on the frames crosswise before the sugar is put on, and then lay the sugar on the sticks directly over the cluster. Now spread a piece of cloth over the top of the hive and sugar so that it will fit down snugly all around the sides—a piece of old gunny-sack is very good for this purpose. After the cloth is on this may be covered with several thicknesses of newspaper, or, if thought best, the super can be left on and this filled up with dry leaves, or the chaff from oat-straw. After the hive is prepared in this way shut it up and cover it if possible with a store-box or otherwise.

It would seem that with such a simple process of feeding in cold weather, no bees should be allowed to starve during the winter. Often a fairly warm day comes during winter when the hives can be opened up and the sugar cakes put in as directed. It is better that the bees have too much food than not enough. So look well to their supplies, especially when wintered outdoors.

Anti-Swarming Treatment Used by J. E. Crane

On page 773 was given in brief Mr. Crane's plan for preventing swarming, and it is a pleasure to give the following fuller particulars:

You inquire in regard to the method I have adopted for many years to prevent, or rather control, swarming, as to how long after the old queen is removed before a virgin queen is introduced. I have found the best time to be 2 weeks. If introduced much earlier a swarm is liable to issue; if much later, the queenless colony may not accept her. As a matter of practice, it is usually 16 or 17 days, as I expect and do go over each yard once in 8 days, except when the 8th day is Sunday, when it is 9. Perhaps I may as well say right here that I have practiced this method of controlling swarming for some 25 or 30 years.

I can not give the number or the percent of swarms that issue with virgin queens in this way, but I think they would be few indeed if introduced in 14 or 15 days from the time the colony was made queenless, and the queen was removed at about the time the colony would have swarmed if left to itself.

I commenced giving virgin queens because I found it, with my bees, almost impossible to introduce a laying queen to a colony that had cast a swarm, or had its queen removed when it was preparing to swarm. I can not tell why this is so, as some of my friends seemed to do so without difficulty.

I tried giving a queen-cell nearly ready to hatch, but found a colony receiving it much more inclined to swarm than when given a virgin queen. I have not been able to tell why this is so. I have read, over and over, that if after a colony has swarmed all cells were removed but one there will be no further swarming for that season. With me it seems to be no protection whatever.

I introduce virgins of all ages, from those just hatched to those 2 weeks old, but prefer those 4 or 5 days old. I think a colony is less apt to accept a virgin when 10 days to 2 weeks old. Once I run short of virgin queens of right age and introduced some very old ones, I think 3 weeks old or more. Several of these became fertile and were of some value.

Did you ask how I introduce these virgin queens? Why, I just let them run in at the entrance, and usually all goes well. I have tried daubing them with honey, because some one recommended it, but it worked no better than letting them run in at the entrance.

Now I will volunteer a few facts that may be of value to you and others. The colony is kept a long time queenless, and there may be more pollen stored in the hive than is desirable, and sometimes it may be carried up into the sections, though I am not greatly troubled with it. The greatest objection to this method is the loss of the young virgin queens introduced. When I first adopted this way, some 20 or more years ago, I lost a few queens when introduced at the right age, but of late years the loss has been greater. When I first began, the loss, as I remember it, was not more than 2 or 3 to a yard, while this year in one yard I lost one-third of the virgin queens that I introduced, or 12 out of 36, while in my other yards the loss was light—I think 3 or 4 to the yard.

If the young queen is not laying at my second visit after introducing, I give 2 or 3 combs of brood, and they soon have a queen. Of course, such colonies are not so strong the latter part of the summer, but as we have little for bees to do after July 20, it does not matter.

I would not advise this method as best for all colonies, but for those having poor queens they do not wish to keep, or for those that are weak in numbers. For very strong colonies I prefer to shake on empty combs or foundation, using the brood for helping weak colonies or nuclei into profitable colonies.

J. E. CRANE.

Middlebury, Vt., Nov. 8.

Some will undoubtedly question the desirability of having a colony remain queenless 2 weeks or longer. But it must not be forgotten that if bees are left to swarm naturally they are left queenless for a time, and the real loss of brood caused by natural swarming is greater than many have reckoned. That loss must not be reckoned from the date of the prime swarm, for the queen diminishes her laying no little before that time. Then there is no brood emerging in the swarm for 3 full weeks, and in the old colony there is no laying for 10 days or 2 weeks. Mr. Crane's plan saves the expense of a watcher, and no doubt results in a larger harvest.

Detecting Glucose in Honey

In the January number of the Ladies' Home Journal appears an article on how the housekeeper may detect adulterants in various foods, by A. G. Woodman. Referring to honey and some other sweets, he has this to say:

A common adulterant of honey, table syrups, molasses, jellies and jams is commercial glucose, made on a very large scale by treating corn-starch with acid. It may be detected quite easily by the peculiar precipitate it gives with alcohol. For this test it will be necessary to use strong alcohol—95 percent. Take a clear glass or tumbler about a third full of the alcohol and slowly pour into it a tablespoonful of the honey or syrup to be tested. In the presence of glucose a milky turbidity will be caused, and at the bottom of the glass will be formed a thick, gummy mass, which can be easily collected in a spoon. If glucose is not present a slight flocculent precipitate will be formed instead of the gummy mass, and there will be no turbidity after the test has stood a few moments. It should be borne in mind that the glucose is not to be considered necessarily harmful, but that its presence always indicates a cheaper or low-grade product.

But, really, it isn't necessary in these days to buy honey that is not guaranteed free from glucose or other adulteration. There are many reliable dealers in honey, the purity of which can be relied on. Consumers should insist on getting only the pure article, as there is no excuse for grocers or other retailers buying adulterated food-supplies of any kind.



Miscellaneous News & Items

The National Convention of 1905 is now a matter of history. It was a good convention. There were about 200 present. In the absence of Pres. Harris, Vice-Pres. Dadant (the new President for 1906) presided, and he surprised even his best friends in the able way in which he handled the convention.

A full report of the proceedings will appear in these columns in due time.

Southern Beedom is a new department begun in this week's number of the American Bee Journal. It is in charge of Mr. Louis H. Scholl, late of the Texas Agricultural and Mechanical College. We trust that bee-keepers of the South will aid Mr. Scholl in making their department as helpful as possible to that splendid bee-keeping portion of our country. We desire that it shall be exclusively devoted to the advancement of bee-keeping in the Sunny Southland.

The Government and Apiculture.—On the first page this week is shown one of the apiaries of the Government at Washington, D. C. It shows almost all of the hives. It is located right in the park beside the main building of the



DR. E. F. PHILLIPS.

Department of Agriculture, which gives it the advantage of having the hives out where everybody who comes near the Department can see them, and also see that something practical is being done with the bees.

In addition to this apiary there is a Caucasian mating yard at Arlington, where there are located 16 full colonies of bees of that race and 75 mating boxes. It has never had its picture taken as it is not a thing of beauty, but a place where the experimenters really get down and dig out results.

We are pleased to present herewith a picture of Dr. E. F. Phillips, Acting in Charge of Apiculture during the absence of Prof. Benton, who, as most of our readers know, is spending a few months in the Orient, looking up new races of bees and also new honey-plants.

While Dr. Phillips was a student in the University of Pennsylvania he became interested in some of the scientific aspects of bees, and in order that he might do his work more intelligibly, he spent two seasons with The A. I. Root



Birthplace of C. P. Dadant, in Langres, France. (It is the house on the wall, at the right, with a garden.)

Co. During that time he became more and more interested in practical bee-work, and when the opportunity came he took the place in the Department of Agriculture, where he can do all the work he cares to do without having to think of doing any teaching or any other routine work except that connected with the running of the office.

In addition to his contributions to some of the bee-periodicals, he has a paper on "Comparative Variability of Drones and Workers," in the Biological Bulletin; "A Review of Parthenogenesis," in the Proceedings of the American Philosophical Society; "The Structure and Development of the Compound Eye of the Bee," in the Proceedings of the Philosophical Academy of Natural Sciences; and a much larger paper on "Variation in Bees," which is not quite completed. Dr. Phillips belongs to some scientific societies, which is to be supposed in one who is so scientifically inclined.

It was our good fortune to have the pleasure of meeting Dr. Phillips at the National convention here in Chicago week before last. He read one of the best papers ever presented before the National Bee-Keepers' Association. Of course it will appear in due time in the proceedings of the convention, and will be read with great interest by bee-keepers.

We think it is fortunate that the Department of Agriculture was able to secure the services of Mr. Phillips, as he seems to be specially adapted to the kind of work that should be done for bee-keepers by the Government. It has been suggested that an effort be made to secure a grant from the Carnegie Institution or Research Fund. Dr. Phillips is not in favor of taking any steps toward getting such grant. He thinks that if everything goes well in the Department of Agriculture there will be plenty of money for breeding experiments. He believes that all that is necessary to get money for work in apiculture is that there should be something to show for it, and he hopes that in the future there will be no difficulty in producing results. He prefers that all breeding work shall be done under the supervision of the Bureau, and does not ask for any aid from the Carnegie people.

Judging from the paper Dr. Phillips read at the National convention, and also from his general character and antecedents, he is the right man in the right place, and we believe that bee-keepers will hear from him in the future in a way that will be very satisfactory to them.

It will be a pleasure for the American Bee Journal to co-operate with Dr. Phillips in the work he is endeavoring to do in the interests of bee-keepers at Washington. Its columns are open at all times for him to lay anything before its readers that he may think of sufficient importance to present to them. Our congratulations are hereby extended to Dr. Phillips upon the magnificent opportunity he has to do some excellent work for the benefit of the bee-keepers of the world, and similar congratulations are extended to the Department of Agriculture upon its good fortune in securing a man like Dr. Phillips to carry on the work begun by Prof. Benton, and which seems to be progressing so favorably during his absence from this country.



Contributed Special Articles

1.—Dadant Methods of Honey-Production

BY C. P. DADANT

President of the National Bee-Keepers' Association.

BEFORE I tell of our present methods in bee-culture, I must first acquaint you with the manner in which we became apiarists, and of our trials before success. Those who have always succeeded are hardly prepared to tell others how to avoid failure, and it is only those who have had ill success, or who have seen it close at hand, that can warn others against possible disaster. I believe, also, that he who finds obstacles in his path will become encouraged when he hears how others have met bad luck which they have finally overcome.

My first recollection of bee-keeping is one of disaster. It was in the fifties; I was but a child, living in France, but I can yet clearly remember a dozen or so of Debeauvoys' hives, opened to the wind, and the combs scattered about on the grass. The season had been very early, the blossoms had come, the bees had bred plentifully, and then, in the latter part of May, a hard frost had destroyed the young growth and all the bloom, and my father's bees had starved and the brood had been chilled in the combs. His apiary was located in the country, several miles from the city where we lived, and, lacking in practical experience at that time, my father had not for a moment suspected the possible disaster to the bees, thinking them well provided with honey, so that, at his next visit, he found all dead—bees and brood. So the hives were thrown open and the brood-combs spread on the grass, that the chickens might eat the dead brood before the combs were rendered into wax. His early experiences with bees and the first movable frame hives are narrated in the first years of the American Bee Journal, Vols. III. and IV.

It was in 1863 that we landed in America. I was then 12 years of age. My father's first start in bees was made with two box-hives of common bees, presented to him by a friend in the spring of 1864. He had come to America with nothing but a good education and willing hands, for he had lost all he had in a slump of values caused by the establishing of a railroad which had refused to climb the high cliff on which my native city of Langres is perched—600 feet above the neighboring country—and which built up neighboring towns at the expense of the old fortress city. The place was good for a



View over the valley from the birthplace of C. P. Dadant.

refuge against the feuds of the middle ages, but it was worthless for the commerce of the Nineteenth Century. The place is now provided with an inclined plane railroad, and is recovering some of its lost prestige. Pardon me if I go into

details that have nothing to do with bee-culture. It is hard to refrain from reminiscences of old times.

The first thing that my father met, on the subject of bees, after this, was a statement in the American Agriculturist that Moses Quinby had just harvested a crop of 22,000 pounds of comb honey which he had readily sold at 30 cents per pound. This was a revelation of possible success in a line of occupation of which he was fond. So he bought Quinby's "Mysteries of Bee-Keeping Explained," and with the help of a dictionary—for you must remember that he did not know the English language at that time—he began an investigation of the best known methods of bee-culture.

The Quinby hive, like the Langstroth hive, had a hanging frame with a bee-space all around, while the Debeauvoys hive had a tight-fitting frame, which it was impossible to move, after 2 or 3 seasons, without tearing the walls apart, owing to the propolis used by the bees to fill up crevices everywhere. How many new and ingenious inventions in bee-culture have been tried and cast aside because of propolis, with which the inventor had not reckoned! And it is propolis yet to-day which causes us to condemn many useful implements that become almost entirely useless when once coated with it.

The Quinby hive, then, was the one to adopt, but my father was slow to give up the shape of the Debeauvoys hive, which had a frame of about the same size as that of H. A. King—a square frame 12x13 inches—and we therefore made half of our hives with American frames, the other half with Quinby frames.

We very soon had occasion to find what a mistake it is to keep several different kinds of frames in an apiary, especially when that apiary is small, for you cannot exchange frames, hives, supers, or bottom-boards, as you may wish. Let me then urge upon the novice who reads this, the necessity of using only one kind of frame, one size of hive, super, section, etc. The multiplicity of sizes is the curse of the apiary. If you have two or more sizes, or wish to try something new, divide your apiary in two distinct parts, and be sure to have enough in each part to enable you to make exchanges without difficulty. The experimenter will never be a practical producer unless he keeps at least a goodly number of hives of uniform size which have been tested and found practical.

The transferring of bees from the box-hives to the movable frames was a difficult task, and was gone over again and again, for the first seasons were seasons of success, the crops being good, and we invested all the results of the bees' work in more bee-hives, containing common bees—mostly bee-gums of hollow trees that had been found in the woods. The bees had to be transferred to be made profitable.

The supers used at that time were wood and glass boxes holding 5 or 6 pounds of comb honey, with just one auger-hole in the bottom of each box, and 6 of these boxes were arranged on the honey-board of a Quinby hive. The Quinby hive as made then had 8 frames, 10½x18 inches inside measure. Swarming was plentiful and the apiary enlarged rapidly.

At this time, or about 1867, we had one misfortune. We had tried wintering bees indoors, in a very crude cellar—a hole in the ground rather than a cellar—under the log-house which was our home. This had proven satisfactory, but room was wanting and we tried silo wintering with a dozen colonies. This succeeded so well that we buried the entire apiary the following season. But we made the mistake of not making a drain to our ditch. The former winters had been dry, cold, snowy, and such as could be satisfactory for indoor wintering; but that winter was mild and wet. Rain after rain came, the ground hardly froze at all, and when the bees were at last uncovered and taken out, a number of colonies had perished from dampness.

In the cold climate of our Northern States I believe that I would not hesitate to practice silo wintering if I had no cellar. A ditch 3 feet deep, fairly well drained, a few poles over the top, after putting in the hives on two timbers a foot or so from the ground; a lot of straw and earth, sloping enough to act as a roof and shed water, a few air-pipes made of narrow boards, half of them reaching near to the bottom of the pit, the others to the top of the air-space in the trench for ventilation, and the bees may be trusted during a cold winter in a trench of this kind as well as in the best cellar. But in a moist country, where freezing and thawing alternate often, moisture is to be feared, and outdoor wintering should be given the preference.

It took us but one season to recuperate from the losses of that winter. The cause of so prompt a recovery was in the empty combs we had on hand from those dead colonies. We read a great deal about the low cost of combs to the bees. After more or less accurate experiments some bee-keepers

have held that 3 pounds of honey would produce one pound of comb. But let two bee-keepers begin again, after a hard winter loss, the one preserving all the good worker-comb, the other melting it into wax and neglecting or refusing to use comb foundation, and results will soon show that *not less* than 7 to 10 pounds of honey must be reckoned as the cost to the bees of a pound of comb.

The cost of the comb lies not only in the actual consumption of honey to produce it, but also in the delay and loss of time to the bees in harvesting, as well as in breeding, when they have to produce the wax and build the comb.

I ascribe a part of our success before the invention of comb foundation to the fact that my father often sent me to buy the combs of the colonies that had died during the winter in our vicinity. Very few people attached to those combs the value that we did, and very few people realize it even now. These combs were carefully sorted, as only the worker-comb was saved and fastened in the frames. Hamilton, Ill.

Preparing in Advance for Next Season

BY G. M. DOOLITTLE.

TALKING with a bee-keeper of a few years' experience—one of those persons who is not so enthusiastic about bees as some of us are—he said that he had his honey all sent off to market and his bees ready for the winter, and then added, "I have bidden the bees good-bye for the next five months, as there is nothing further to do along the bee-line till spring opens in April."

After he had gone I fell to thinking and wondering how many of the readers of the American Bee Journal were managing as this man was. The person who thus reasons and works will surely not make the greatest success in our pursuit.

As soon as the honey is marketed and the bees in winter quarters, the successful man will begin to prepare for the next season, no matter whether that time is November 1, or a few weeks later. I do not mean that he will bend every energy, and work every hour, as hard as he did in June, July and August, but I do mean that he will be as much interested during the winter months as in the summer, and spend much of his time in storing his mind with something useful about the bees, by reading and planning, and at the same time work with his hands by getting ready all the paraphernalia necessary for a successful season, so that he need not have to stop during the hurry of the honey-gathering season to nail up hives, sections, or anything of the kind. In fact, if the mind is engaged through reading and posting up on apiculture, it will be almost impossible to keep the hands from going right to work in the matter.

Get around the back volumes of the American Bee Journal, and any other bee-papers, if you have them, and by the index look up all you can find on the subject of hives, sections, putting in foundation, swarming, artificial increase, prevention of swarming, etc., studying by *subjects*, rather than a promiscuous reading, sticking to *one* subject till you have read everything you can find on that subject in all the papers and books you may have, and until you feel an enthusiasm in the matter that makes you "master of the situation."

Now, if you take Hives as the first study, while you are studying on this matter, get around all the hives you may chance to have and repair them where necessary, and fix them all ready to use at a minute's warning when the season for increase is at hand. And if you do not have as many as you think you will need, make new ones till you are sure no more will be needed during the next summer. Thousands have lost swarms by their going to the woods while the owner was hurrying to get a hive made to put them in, or artificial increase has been delayed till the best part of the season was over, because the hives had to be made before the increase.

Then when the frames are made, and the section matter studied up to your satisfaction and their completion, you will be ready to take up the comb foundation matter, and post yourself on that; finding out how much you will use in the frames, and also in the sections; deciding whether they are to be filled full or contain only starters; and, as you decide, go to work at getting these ready with the desired amount of foundation in each.

I have been censured several times for advising the putting in of foundation during the winter months, those doing this claiming that the foundation should be put in only at the commencement of the season, and using that fresh from the mill, otherwise the bees would not work it to the best advantage. I have put the matter to test again during the past season, using fresh foundation in part of the sections, and that

2, 4, and 5 years old in the others, and alternating these in the same surplus arrangements, and, as in former experiments, I cannot see any difference.

Before bees have access to the sections, I admit that the old looks less inviting than the new, having a cold, hard look, while the new looks much more yellow and soft; but just as soon as the bees cluster on each, the old comes back to its new appearance and pliability, the bees drawing out and filling each to an extent that, taking the average of the colonies treated, I can see no difference in favor of either. The only old foundation that the bees seem disinclined to work is that which has been on the hives, undrawn, during a period when propolis was being gathered in large quantities, at which times the untouched foundation is often smeared with thin, or almost liquid, propolis, to an extent which makes it look as if it had been varnished. When any foundation has been so treated the bees are very loth to work it, and I have known sections containing such to be left untouched, while those all about them, containing both old and new foundation, were nicely filled.

In studying this matter of sections you will not fail to look up the matter of "bait" sections, for, if you are like me, you will want from 2 to 12 such bait-sections in every surplus arrangement which will go on each hive at the commencement of the honey-flow. I use these baits only to start the bees in the sections, so that one super to each colony you expect to run for comb honey will be sufficient; and thus you will know how many you can use to each hive by dividing your baits by the number of colonies you expect to use for section honey.

If you failed to have the bees clean the honey out of these part-filled sections last fall, and you do not wish to hold them for spring feeding, you can extract the honey out of them at any time during the winter, as the honey must be emptied out of them, for the reason that it will not be likely to correspond with the new white honey that will be stored in them at the beginning of the harvest. To extract this honey best in cold weather, fix a shelf as near the ceiling of your room as possible (as the room is the warmest right up to the overhead wall), putting the part-filled sections on this shelf. Early in the morning start the fire, and keep it going all day, keeping temperature at this shelf as near 100 degrees as possible. By 3 o'clock in the afternoon you will find the honey warm and thin, while the combs will be tough and pliable. You can now extract the sections by putting several in a close-fitting frame, and handling these frames of sections the same as you would a comb for extracted honey. When the honey is out, then you are ready to fill the surplus arrangements ready to be set on the hives at a moment's notice when the honey harvest arrives.

I have been censured for thus advising the use of bait-sections, the claim being made that if we do thus that the little honey left after extracting will granulate, and from this the "seed" for granulation will be left in the cells, so that the honey in baits thus used will granulate much sooner than would be the case were the sections cleaned by the bees in the fall before the honey had a chance to granulate. But after years of careful observation and experimenting, I can only think my critics are mistaken, for such does not hold true with me. I am confident that the bees always clean all cells in which they deposit honey absolutely clean before they store any honey therein, and by their so doing all this supposed "seed" is removed so that there are no granulating "germs" left to start granulating. And, as my experience says that the honey in such extracted sections does not granulate any quicker than that in any of the sections containing baits, cleaned by the bees in the fall, as is often recommended, I must be excused for thinking that the ideas of my critics are not well-founded.

And so you will keep on studying and preparing everything you know you will need next year, till you are not only well versed in it all, but have all in readiness in which you are well versed, when you will be fully prepared to meet any and all that may come along during the season, whether that be an extra-good one, a medium, or a poor one. If the latter, being all in readiness will help you to secure much more than you otherwise would in a poor season, as I have proven during the past season in which many bee-keepers about here obtained very small results, while my colonies gave an average yield of 114 pounds of section honey per colony.

If you have never tried preparing as above, this will be in time for you to do so this winter, and in this way you can prove whether Doolittle is right or not. Borodino, N. Y.

See Langstroth Book Offer on another page of this copy of the American Bee Journal.

Cleaning Unfinished Sections—Black Bees— Finding Queens—Feeding Bees

BY EDWIN BEVINS.

WITH reference to Miss Wilson's inquiry as to why her bees are so plaguey mean about cleaning out unfinished sections, I shall have to reply in the words so familiar to all of the readers of the American Bee Journal in all lands—"I don't know." If I had a lot of bees showing such perversity of disposition I think I would have them hanged, drawn, and quartered.

I will venture a guess, however, as to what is the trouble. Bees will carry down unsealed honey at almost any time, but are very slow to remove the cappings from sealed honey when there is little or no room for storing in the brood-chamber. If, after Miss Wilson had put the first super of unfinished sections on hive No. 32, and had it occupied by the bees, she had taken it off and put on a super filled with empty combs, or combs only partly filled, and then placed the board on that, and the super with the bees on top of the board, I believe results would have been better.

When bees are slow to uncapp their honey I use the uncapping-knife. In all my experience, honey, after uncapping, has disappeared very rapidly, unless the weather had become too cool, or the brood-chamber happened to be too nearly filled.

I have 4,000 or more of cleaned-out sections at this writing, and all were cleaned on the hives, without exposure to all of the bees of the yard, and with no great trouble on my part.

My bees, I believe, are a good deal like Dr. Miller's, except in the matter of contrariness about cleaning out unfinished sections. ting with a few black bees about 14 years ago, I have been introducing more or less Italian queens and nuclei into the apiary every year since. The queens have all been from reputable breeders in many States. I have also some bees with queens reared in the yard in colonies doing the best work. The present fall I have purchased and introduced more Italian queens than in any one season before.

UNDESIRABILITY OF BLACK BEES.

Mr. Allen Latham quite recently made, in the American Bee Journal, a strong plea in behalf of the blacks. One circumstance, observed this season, spoke eloquently to me of their undesirability. The season was a poor one for honey. Starting the season with 140 colonies, and having an increase of 3 by swarming, I have only 120 colonies packed for winter. The lessened number is due to doubling up—doubling the weakest and lightest with stronger and heavier colonies.

In doing this work I found almost invariably the colonies of blackest bees were the lightest in stores. The colonies having most stores had queens of the previous season's rearing, or were strong in Italian blood.

My work of doubling and requeening began about Sept. 22, and did not end till the first of November. I began and ended feeding on the same dates. The feeding ought to have been finished earlier, but having a large number of colonies to feed, and there being a promise in early September of a good fall flow, I delayed feeding in order to save expense. A change in weather conditions destroyed this hope, and it was then that I began an examination of the hives.

In my examinations, whenever I found a hive with bees that showed they were very weak or altogether deficient in Italian blood, the queen was removed and an Italian queen given. There were but few colonies in this condition. The other colonies requeened were strongly hybrid, and the changes were made for various reasons.

FINDING QUEENS IN THE HIVES.

Much has been written on the subject of finding black queens which is all thrown away on me. I cannot endure to spend much time in the search for a queen. My way is to nail a strip of perforated zinc across the entrance of an empty hive, and then set this empty hive in the place of the hive where the queen is that I want to find. Care must be used in cutting the piece of zinc. It is necessary to cut so as to leave a mere thread of metal below the lower row of perforations, so that the metal between the ends of the perforations may not be bent inward or outward. A strip thus prepared is better than an Alley trap, or a swarm-guard, as it makes no place for some of the bees to cluster and thus hinder the entrance of other bees.

When the empty is put on the old stand, I put a wide board in front, propped up so as to be on a level with the top

of the alighting-board. Then I have two pieces of board about 20 inches long and 2 or 3 inches wide, which reach out in fan shape from the two front corners of the hive. Then I shake the bees from every comb down on the wide board, knowing that the queen is outside of the prepared hive and cannot get inside without passing through the zinc. It is a short job to find a queen in this way.

On some warm afternoons the past fall it was necessary for me to do the work so late that darkness prevented me from finding the queen until morning. Then I generally found her in a small cluster of bees. When a good many bees mass, and become motionless outside the hive, their entrance can be hastened by stirring them gently with a stick.

I was surprised at the number of queenless colonies I found, and the entire absence of drones in all colonies.

In only one colony have I seen any evidence of superseding the queen. At the end of the white honey-flow this colony had brood in but two combs, and these were not full. It was my design to requeen at that time, but observing that there was but little unsealed brood in the combs, and that there was a light-colored queen-cell on the face of one of the combs, open at its lower end, I concluded to wait. Later I found a queen in the hive, and there was a good-sized colony at the end of the season.

FEEDING BEES FOR WINTER.

I had to feed about three-fourths of the colonies this fall. The feed was prepared in a common wash-boiler, by first putting in 30 pounds of water, and, when the water had come to a boil, stirring in 60 pounds of granulated sugar and 10 pounds of extracted honey, thus making 100 pounds of feed, minus the loss by evaporation.

I fed in atmospheric feeders, which are most satisfactory for me. They held one quart each, and as many as needed can be put on the hive at once.

The feed was given quite warm, and in order to prevent escape of heat from the brood-chamber, I put an empty hive-body on it, and then put a sack partly filled with chaff on top of the feeder, making the cushion fit snugly to the sides and corners of the hive.

Leon, Iowa.



Convention Proceedings

Report of the Worcester Co., Mass., Conventions

(Continued from page 902.)

TESTING THE PURITY OF BEESWAX.

"Some of you may ask, How can we detect adulterated wax? Chemical analysis is the surest way, but as I said at the beginning, we are not all chemists; something easier can be used even if it is not absolutely correct.

"There is the float test, or, speaking more exactly, the specific gravity test. Pure beeswax is lighter than water, and most of the adulterants are lighter than beeswax.

"We will first partly fill a jar with water, and in it place a piece of wax that I secured from some burr-comb. As you see, the wax floats. We will now pour into the jar alcohol until the wax just touches the bottom."

He then took a piece of wax purchased at one of the department stores of the city, but this did not touch the bottom, showing that it was lighter than beeswax, and consequently adulterated. Several other samples were also tried.

"Another test is the benzene test, as wax will dissolve in benzene almost as rapidly as sugar will in water. One authority described the test something as follows: 'If the wax is pure the benzene will appear nearly clear—colorless—but if there is an adulterant the benzene will appear cloudy, more or less as per the amount of adulteration, and particles of adulteration will be seen floating around.'

MEETING OF DECEMBER 9, 1905.

An apiarian exhibition in Horticultural Hall is what the Worcester County Bee-Keepers' Association decided would be the proper thing. No association or society in

the country has ever had an exhibition wholly devoted to bee supplies, appliances, literature, and the like, and the bee-keepers of Worcester County think that such an exhibition would not only be most novel, but one in which people in all sections of the country would be much interested.

People seldom have an opportunity to learn or see anything of bees unless they own a colony, except the small exhibits in connection with agricultural fairs. Then only a few hives are shown, and those, with a few bottles and cakes of honey, comprise the whole exhibit.

For some time bee-keepers have been considering such an exhibition. The matter was brought up, and a committee of five was appointed to find out just what can be done. It consists of Adin A. Hixon, Burton N. Gates, Charles R. Russell, Frank Drake, and Horace P. Jacobs.

For the Worcester Horticultural Society, Secretary Adin A. Hixon offered the association the use of Horticultural Hall for the exhibition, for which the Horticultural Society received a vote of thanks from the bee-keepers.

The exhibition will be on a large scale. Not only will every bee-keeper in Worcester County send everything of interest pertaining to bees that he has, but bee-keepers from all sections of the country, as well as supply houses, publishers of bee-literature and the like, will all want to send an exhibit.

Manufacturers, publishers of bee-books, etc., might find it to their profit to correspond with the secretary in reference to the apiarian exhibit next fall.

The Association met for the first time this winter in Horticultural Hall at 2:30, with President Frank H. Drake in the chair. About 25 members of the Association were present. Secretary Charles R. Russell was not present, and Burton N. Gates acted as secretary pro tem.

At the time that the Secretary sent out notices for the meeting he also asked for information about the number of increase in colonies, average yield of honey per colony, total yield of honey for 1905, number of colonies to go into winter quarters, and whether the bee-keeper had seen any sign of bee-disease. Thirteen or 14 bee-keepers sent in reports, and the first part of the meeting was devoted to these.

In one case one man extracted 200 pounds of honey from one colony, while 460 pounds was the greatest yield for 1905 for any one person. Mrs. Herbert A. Holmes sent in that number of pounds for her total yield for the year, which was considerably above any of the yields reported by the other members. Several claimed 300 to 350 pounds.

From 10 to 30 colonies seemed to be the number to go into winter quarters.

Arthur Monroe talked of his experience as a bee-keeper and how he happened to keep bees. His talk was followed by remarks by Harry C. Shepard, W. W. Jacobs, and Frank H. Drake.

James Wheeler, manager of the White estate, was recommended as a suitable speaker for the Association. Arrangements will be made to secure him as speaker for one of the winter meetings.

The Secretary also announced that Arthur C. Miller, who has spoken before the Association before, had promised to address some meeting.

C. R. RUSSELL, Sec.
Worcester, Mass.



The Illinois State Convention

The 15th annual meeting of the Illinois State Bee-Keepers' Association met in the Supervisors' Room in the Court House at Springfield, Nov. 21 and 22, 1905. A fairly good attendance of our most active members was had.

The first session was called to order at 10 a.m., with Pres. Smith in the chair.

The regular order of business was taken up, and the reports of the several committees were read and accepted.

C. P. Dadant moved that the report of the Legislative Committee be adopted and the committee continued. Carried.

Mr. Baxter moved that the Premium List Committee be instructed to ask for a larger premium on designs in beeswax; and Mr. Black amended by asking that the premium on case of amber comb honey be restored. Carried.

On motion of J. E. Johnson, which prevailed, it was ordered that the Executive Committee be instructed to have enough copies of the 5th Annual Report bound in cloth for

all the members of the Association. Mr. Dadant moved that 1000 copies of the next annual report be printed, and as many foul-brood pamphlets for circulation as the committee thought could be used beneficially. Carried.

The Auditing Committee reported on finance, that the accounts of the Treasurer and Secretary balanced to the cent, and it was voted that the account be itemized and printed in the 5th Annual Report. The committee were, C. P. Dadant, S. N. Black and J. W. Bowen.

The election of officers was held on the forenoon of the second day, with the following result: President, J. Q. Smith, of Lincoln; Vice-Presidents: 1st, S. N. Black, of Clayton; 2d, James Poindexter, of Bloomington; 3d, J. W. Bowen, of Jacksonville; 4th, J. E. Johnson, of Williamsfield; 5th, Aaron Coppin, of Wenona; Secretary, Jas. A. Stone, R. 4, Springfield; Treasurer, Chas. Becker, of Pleasant Plains; State Foul Brood Inspector for 1 year, beginning July 1, 1966, J. Q. Smith, of Lincoln.

On motion of Mr. Bowen, the Secretary was voted \$50 for his services for the ensuing year, the amount to come out of the funds of the Association.

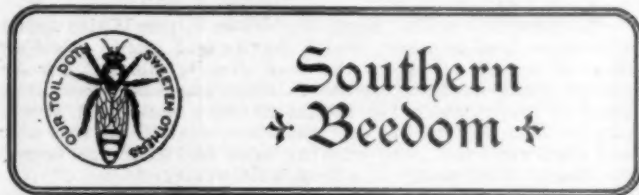
The Secretary was elected a delegate to represent the State Association at the next meeting of the National, and also the Chicago-Northwestern, railroad fare to be borne by the State Association.

On motion of C. P. Dadant, the Executive Committee was authorized to pay the railroad fares of those who are asked to participate in our future program.

The convention recommended sending out return postals to secure names of bee-keepers, and at the proper time to send out notices of our next meeting to all of them.

A shorthand report of the proceedings will go to make up our 5th Annual Report.

JAS. A. STONE, Sec.



Southern + Beedom +

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

A DEPARTMENT FOR THE SOUTHERN BEE-KEEPER.

The bee-keepers of the South are to be favored with a special corner of their own in a weekly—the American Bee Journal. That means a visit every week for them. Will they appreciate it?

My bee-keeping friends, I have no lengthy remarks to make. This department is to be ours. *Ours*—all of us—and not mine only. Let's make it a valuable one to us. I shall endeavor to do my part. What will *you* do?

BEES CARRYING IN POLLEN.

Our bees have been flying on warm days, with a roar that reminded one of the opening of spring. Some of them were carrying huge loads of new pollen. Mistletoe is our first yielder of both pollen in abundance and some honey. Now, really, I do not know whether to call it the first or the last of the season, but it is the first because it stimulates the bees for the next season's work.

SOME INFORMATION ABOUT SOUTHWEST TEXAS.

Several letters have been sent me with questions about Southwest Texas, and in regard to information for bee-keeping and other pursuits, and that I answer them through the columns of the American Bee Journal. A goodly number of other letters, also, have been received asking for a personal reply, but as I am "at least quite a busy man," I cannot write to each one separately, hence must refer them to the information given in my articles, in which such information can be imparted not only for the benefit of the inquirers but to others who may be interested as well.

First of all, I should like to refer such interested persons to a copy of the "Texas Almanac." It is gotten out by A. H. Belo & Co., of Dallas, Texas, and will be mailed for 31 cents, postpaid. It will give you more information than anything else I can refer you to just now. There are descriptions of each of the counties of Texas, their soils, water supply, climate, topography, resources, industries and products, and also information concerning population, schools, churches, transportation facilities, etc. Besides the county descriptions

there is much other valuable information concerning the crop resources and industries of the State. Each of these is handled by persons who are authority on the subject in question. There are articles on each of the industries and resources of the State of Texas written by those who know. These will give the reader a better idea and conception of what there really is in Texas, so that they can conclude for themselves whether they want to come or not.

A NOTE OF WARNING.

As some people need to be cautioned occasionally, I wish to say a word along this line here. It is not every person who should come to Texas. In the first place, we do not want everybody, or anybody, here, for we can only need the better ones, those with brains and brawn, who will mean a lot of good by coming here; and, then, we do not wish such persons to come here who have a good home, and are making a comfortable living, and if they have reasonable hopes of a prosperous future for their children. If such is the case they ought not to "pull up stakes" there and go to unknown lands. They would better adopt the old saying of "letting well enough alone, and not make it worse."

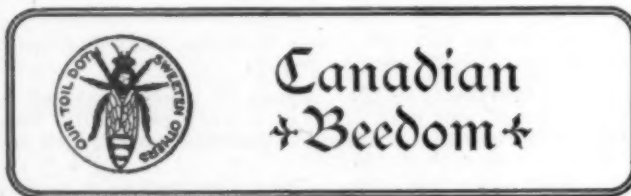
But if climatic or apicultural conditions are unfavorable, and a change will be of advantage, then we would advise them to go to the new country. Or, if land cannot be bought satisfactorily near the old home to provide for the children's homes as they grow up, it would be wise to change to a location where land can be bought or otherwise obtained *cheap*, and Texas would offer many opportunities. But before concluding to move, *be sure* to investigate thoroughly, going over the ground carefully—in person, if possible.

TO PROSPECTIVE HOME-SEEKERS.

Six million acres of school lands were placed on the market by the State of Texas Sept. 1, 1905, and other lands will come on the market from time to time as the leases on them expire. Lists of these tracts of lands, and others that will be published of additional lands that will be put on the market from time to time, can be obtained by applying to Hon. J. J. Terrell, Commissioner of the General Land Office, Austin, Texas. These will be supplied free of cost to applicants, and will also contain information and directions for applying for these lands. The prices generally range from \$1 to \$3 per acre; in some cases more. The terms are one-fortieth cash, the balance in 40 years, with interest at 3 percent. The lands may be held 40 years by making the original payment of one-fortieth down and paying the interest annually.

Those who are seeking to locate in Texas would best write to the Land Commissioner for these lists. For information concerning the counties in which these lands are located, reference should be made to the "Texas Almanac" referred to.

In another issue some important questions will be answered that have been asked by several inquirers.



Canadian + Beedom +

Conducted by MORLEY PETTIT, Villa Nova, Ont.

GETTING COMBS BUILT.

Now as to getting combs built in frames, we need to use a great deal of patience and good judgment. An ideal comb for all purposes—brood-rearing and storing of honey for extracting—is one which is as straight and even as a board, and completely fills every side and corner of the frame with worker-comb. Such combs, especially of the Langstroth size, are not easily obtained. For getting them we need good, tough foundation. I have not tried anything that says less than that made by the Weed process.

The sheet of foundation should come very close to bottom and side bars, and if well wired and handled carefully it will not sag enough to buckle at the bottom.

By "well wired," I mean three or four horizontal wires drawn *tight*. Some advocate a slack wire to allow the foundation to sag. I don't want it to sag, and with tight wires and good foundation, and proper management, it does not sag, or buckle, either.

By "proper management," I refer to the main point in

getting straight combs. Do not get the foundation in too hot a place. Have upward ventilation in all hives during the honey-flow, but particularly in those where foundation is being drawn out. New swarms are especially hot-blooded, and require more ventilation than others.

In favorable springs we can get some combs built during sugar-maple bloom, by putting foundation in the center of the brood-nest of strong colonies. Of course, this is exceptionally early; but in a good flow from fruit-bloom a couple of frames of wired foundation can be put between sealed brood-combs, and will be built out and occupied by the queen. Later, during the main honey-flow, any number of new combs can be got in this way; but with this disadvantage: The lower edge of the foundation is often gnawed away to leave a bee-space between the bottom-bar and the comb. This is especially the case in a slow flow. Foundation should never be left in the hive when there is no honey coming in.

Combs built in the super when there is a brisk flow on, are much more apt to fill the frames nicely; but here are other disadvantages: If a full super of foundation is put on at once it is very liable to induce swarming; and if combs are mixed in with the foundation these are filled and bulged away over against the foundation. To overcome the bulging use a "foundation separator," which is like a fence separator grown to the size of a division-board.

Some of my Canadian friends who object to dummies in comb-honey production will no doubt object to these on the same score—"too much truck;" but it gives nice, straight combs on both sides, and also supports part of the weight of the bees, relieving the tendency to sag the foundation.

Those who use wide spacing in the super will find it necessary to space foundation close until it is drawn out.



Our Sister Bee-Keepers

Conducted by EMMA M. WILSON, Marengo, Ill.

THE BEE AND HONEY PEDIGREE.

The pedigree of honey
Does not concern the bee;
A clover, any time, to her
Is aristocracy.

—EMILY DICKINSON.

HONEY-VINEGAR—HONEY IN REMEDIES.

One of the good Wisconsin brothers, Elias Fox, sends the following on the uses of honey:

HONEY-VINEGAR.—Two pounds of honey dissolved in one gallon of soft water. Set in a warm place until thoroughly fermented. It makes the purest, the healthiest, and the best vinegar on earth.

□ **HONEY FOR DYSPEPSIA.**—Take a good glass of boiling hot water and stir in it 4 tablespoonfuls of honey, and drink while hot before retiring. It will promote sound sleep, good digestion, free action of the liver and kidneys, and cure nervousness.

HONEY IN COUGH REMEDIES.—Always use honey in all cough remedies instead of sugar.

A HONEY SALVE that never fails to cure boils and carbuncles is made by mixing together pure honey and wheat flour. Make a stiff paste, spread on a piece of muslin, and press tightly on the sore. Remove and apply a new one every 12 hours.

HONEY TO KEEP LIPS SOFT AND SMOOTH.

To a young lady anxious as to the condition of her lips, "Mme. Qui Vive," in the Chicago Record-Herald, replies:

"To keep the lips soft and smooth apply honey or white vaseline."

One can not help wondering why she should give vaseline as an alternative. Surely, no one would hesitate to decide that the pure and delicious product of the busy bee is far and away ahead of any preparation of the disagreeable

coal-oil to keep a young lady's lips in condition for any proper uses for which they were intended.

Quite likely, however, "Mme. Qui Vive" thought that in a large number of cases, if not the great majority, vaseline would be found more ready at hand than honey. Should it be so?

"BEES DO NOTHING INVARIABLY."

An Australian bee-paper credits the saying, "Bees do nothing invariably," to "the late Mr. L. Harrison."

Good friends on the other side, you have things somewhat mixed. That saying originated with one of the sisters, and when you wrote "the late Mr. Harrison" you probably had in mind "the late Mrs. Harrison," who wrote many a good thing. But neither should the credit for that saying be given to Mrs. Harrison, but to another of the sisters—Mrs. Ellen S. Tupper, who at one time edited a bee-paper in this country.

A BEE-STORY FROM VERMONT.

A friend from Elizabeth, N. J., sent me the enclosed clipping a few days ago. They knew all about me and my bees, and I really think they thought I had "bees in my bonnet" when I told them some things about the bees when they were visiting me during the past summer.

I thought possibly some one could amuse themselves with the clipping. I am inclined to think that the queen-bee did not need to lead the workers to the place where the honey was, and so consequently the person who wrote the article was not "posted" on bees.

Grand Rapids, Mich. (Miss) ELSIE A. CUTTER.

The clipping referred to reads as follows:

SHREWSBURY, VT., Sept. 30.—When Elmer White found a bee-tree last summer, which he figured would yield at least a bushel of honey, he was greatly pleased, for he needed a new shotgun for the fall hunting, and was a little short of ready cash. He estimated that the sweet would pay for half the cost at any rate, and visited the tree now and then until the hard-working bees had filled and sealed the combs preparatory to a long, cold winter.

Then he cut the tree down, smoked off the indignant bees, and, with the help of his wife, carted the honey home. There was a little over a bushel, and it was finally decided to put it in the loft over the corn-crib. Here, Mrs. White said, it would keep dry and get air enough to prevent granulation. As honey wasn't bringing much at the time, it was thought better to hold it until the first of September, when the price would advance.

Along in August Mr. White went to Rutland and picked out a fine, breech-loading shotgun for \$12, and told the store-keeper to put it aside and he would call for it before duck season. He paid \$4 on deposit, and felt so pleased that he bought his wife a new poke sunbonnet for \$3. Then he went home to farm it and wait for the rise in the price of honey.

The rise came about Sept. 1, as he expected, and last week he drove to the village and met a traveling produce merchant by appointment. Together they journeyed back to the farm, and the pair, accompanied by Mrs. White, got a ladder and proceeded to the corn-crib. The merchant had brought some tin boxes and a pair of scales, and leaving the latter in the barn and swinging the former on a rope, he followed the farmer to the crib-loft. Mrs. White remained on the ground.

The surprise of the pair when they found every particle of the honey missing from the comb can scarcely be imagined. Not a grain had been left. The comb itself remained intact, but the sweet had been taken to the last drop.

"Wal, I'm jiggered, if that don't beat me clean holler," gasped Mr. White, gazing in dismay at the dry comb.

The merchant, who had been examining one of the many small air-holes, laughed uproariously.

"I guess this explains it," he said, pointing to a hole well stuck up around the edges. "Those bees were a little too smart for you, Captain. They've flown in and retrieved their losses."

And so it turned out. The intelligent insects, under the leadership of the queen-bee, had followed the destroyers of their home to the farm, and, when the honey had been deposited within reach, had industriously taken it away a little at a time. It was useless looking for it now, as they had flown far with the sweet particles, and were now beginning their winter's feast.

While this story may have fact for its foundation, the

material for its superstructure is evidently evolved in large measure from the brain of the imaginative reporter. The foundation facts probably are that Mr. White obtained 20 pounds of honey—possibly only 5—and that Mrs. White, desiring to keep it for a time, possibly for company, put it where the bees could reach it, and any bee-keeper can guess the result.

But let us not deny the imaginative reporter his due meed of praise. He who causes us to smile deserves our thanks, and the sister who can read the article through and not smile at some of the items evolved from the inner consciousness of that reporter—well, her smiling machinery must be in need of repairs.

Pity that reporter did not tell just how Farmer White could estimate so closely the amount of honey to be contained in the tree just by looking at the outside of the tree. And why did Mrs. White remain on the ground while the others went aloft with the tin boxes swung on a rope?

Let us not fail, in passing, to add to our catalog of facts for future guidance, that honey must be put where it will get air enough to prevent granulation until the rise in price always sure to come in September!



Mr. Hasty's Afterthoughts

The "Old Reliable" as seen through New and Unreliable Glasses.
By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

MEDICAL DEMAND FOR BEE-STINGS.

That medical writer on page 806, hardly meant what some will understand when he said the medical demand for bee-stings was far in advance of the supply. The visible supply is many thousands of millions—and the people of the U. S. are less than a hundred millions. Each man, woman and child can have more poison than they want to carry. Of course, what he meant was that the few bee-men now in that line of business were badly behind their orders. As to the *modus operandi*, one way, I believe, is to catch each bee in turn, pinch it a little until the sting protrudes, then seize the sting with suitable forceps and pull it away, poison-sac and all. Selser's new method I incline to register a mild protest against—making a whole colony mad until they will sting a rubber blanket at wholesale, and then picking the stings out of the blanket. Wastes the poison injected into the puncture for one thing; be quite awhile before the last one could be pulled. And it don't seem quite the proper practice to infuriate bees, except for ends not to be secured in any other way, lest survivors remember it, and punish outsiders another day. Apparently it's not altogether necessary to make a colony or apiary more dangerous to a community than it already is in order to harvest poison for the doctors.

PRICES OF HONEY AND BUTTER.

According to Doolittle, page 807, honey for a long series of years trotted nicely with butter in even span. Sad to relate, it had to be taken out at last and trot alone. Has been getting farther and farther behind on the course every year since. Very likely the identity of the prices of butter and honey did us good while it lasted; and the approximation of honey and sugar is beginning to do us harm now. With butter at 22 and honey at 20, the seller could argue for 2 cents more; but with honey at 7 and sugar at 6, the buyer can argue like mischief that honey ought to come down a cent.

THOSE WAX-HONEY EXPERIMENTS.

De-lighted, as our President would say, to see my wax-honey experiments return to me after so many days, as they do on pages 808 and 809. 'Spects that is the best contribution to apiculture I ever made.

And I rather think the time is ripe now for a little plain talk. Who originated the wretched and egregious superstition that there is any *mysterious loss* in the transformation of honey to wax? Most superstitions came down from ancient times; but this one grew up in modern times—and sticks to apiculture like a lawyer-lamprey sticks to a big and unfortunate old fish. Honey has a large proportion of water, and wax none; but otherwise there are the same ingredients in the two, but the ingredients in very different

proportions. It takes about 3 pounds of honey to afford materials for a pound of wax—and that's just what the ratio between the two is, neither less nor more. Let us shake off our last great superstition, and burn up our rotten old idol, as the Sandwich Islanders burned up theirs.

Thanks to Adrian Getaz for showing that Huber, and Dumas, and Edwards, did not launch the 20 to 1 incubus, but were engaged in downing that ancient superstition, that wax was gathered from the flowers. Glad to see that others besides myself have reached the correct answer experimentally—and a different line from mine.

About 82 parts carbon, 13 parts hydrogen, and 5 parts oxygen, in 100 of wax.

About 28 parts carbon, 8 parts hydrogen, and 64 parts oxygen, in 100 of honey. Whether the honey is or is not supposed as entirely deprived of its water, I am not quite sure.

The reason the chemists say about instead of using their usual precision, is that wax is a variable mixture. Three different waxes in varying proportions constitute beeswax. Honey is also a mixture of several different sugars in varying proportions. The ratio between 28 and 82 is a little less than 3, to-wit: 2.9286. If we should add 15 percent to this for water, we would have a ratio of $3\frac{1}{2}$ —very nearly.

It is not necessary to suppose that Bruner's experiments are anything else than correct. He fed on a large scale, and the bees had to have part for their own support, and also to rear brood right along. To get a pound of wax for each 7 pounds of honey, fed in this wholesale way, is doing tolerably well. At our prices for wax, it would be getting about 4 cents a pound for dark extracted honey. But if Mr. Getaz's "inspiration" can come true, and the product supplant foundation in sections, instead of being melted up, it would be getting $8\frac{1}{2}$ cents a pound for the honey.

NECTAR-YIELDING CAPTIOUSNESS OF ALFALFA.

The captiousness of alfalfa yielding honey abundantly when its severe conditions are all satisfied, and not a drop otherwise—Prof. Cook thinks that fault can be bred out of it easier than the honey-yielding habit can be bred into—say corn, or the potato—easier than the too-long tubes can be bred off the red clover. He may be right, but I have my doubts. Captiousness is a pretty stubborn quality. The man who sometimes will do a wonderful day's work to brag on, but usually nothing at all, may be harder to reform than the savage who never did a day's work in his life. Page 807.



Doctor Miller's Question Box

Send questions either to the office of the American Bee Journal, or to Dr. C. C. MILLER, Marengo, Ill.
Dr. Miller does not answer Questions by mail.

Preventing Swarming When Running for Extracted Honey

How do you prevent swarming when you are extracting the honey? We had 80 colonies this year run for extracted honey. Of these probably every one prepared to swarm. They all had good ventilation from the bottom of the hives, and probably every one swarmed, or prepared to do so. Can you give any reason for it? VERMONT.

ANSWER.—The truth is that I don't prevent swarming when extracting, for the simple reason that it has been many a year since I worked a colony for extracted honey. If, however, I were running for extracted honey, I think I should take advantage of some things that are barred out from comb-honey producers.

First, however, I must confess that I don't know why your bees should want to swarm, and yet why shouldn't they? You don't say that your treatment of them was any different from your treatment of comb-honey colonies. Of course they would be at least a little less inclined to swarm because of having combs ready-made in which to store, but that alone is hardly a sufficient deterrent.

You say they had good ventilation from the bottom of the hives. Now that is one of the things to be tried different for extracted honey; not only good ventilation below,

but good ventilation above. With comb honey all must be closed above, but I don't believe it hinders work in the extracting combs to have abundant ventilation above. If a current of air is allowed to pass through from bottom to top, it is easy to see that the cooling effect will be many times more than to have only the same amount of ventilation below, and I think we are all agreed that abundant opportunity to cool off on hot days is a strong factor in the way of preventing swarming. One of the things that gives me confidence in this kind of ventilation comes from my own experience. Every year I have one or several colonies that I call "piles"—combs piled up 3 to 5 stories high, and an opening to each story, thus giving the air a "through ticket" from bottom to top, with chance for side excursions at each story. Not one of these piles has ever swarmed, and I think it is not so much because of abundant room as because of the through ventilation. And yet I can not be sure that another factor may not have had something to do in the case, for nearly always these "piles" were started from colonies weaker than the average, becoming extra-strong as the season advanced.

Another thing I would try is the Demaree plan, which, as you probably know, consists in putting an empty story under the full one at the beginning of the harvest, the queen being held in the lower story by an excluder.

Mating and Laying of Queens

1. Does the slaughter of drones from a nucleus in which a young queen is contained indicate that the queen is mated?

2. How can I prevent the bees from building comb about the queen-cells on the stick in the prepared frame within the brood-nest?

3. Will queens lay after being mated while confined nights and days to the dark room, or should they be left outside when mated (not knowing whether they are mated or not), after they have flown say 5 or 6 evenings during quiet and sunny weather? I have carried 10 nuclei in and out for 12 days after cells have hatched, and I can not find an egg.

ENGLAND.

ANSWERS.—1. Yes, it is quite satisfactory proof that drones are no longer needed.

2. I don't know how to prevent it, and turn the question over to Mr. Doolittle. I'm not sure that I should want to prevent it, for it seems to do no harm, and is proof of prosperity that encourages such building.

3. I suppose you refer to the plan of keeping nuclei in the dark and carrying them out late in the day after drones

have ceased to fly, stimulating the virgins to fly at this late hour by feeding, and also getting the desired drones to fly in the same way. At the proper time after mating the young queens should lay, even if kept in the dark most of the 24 hours. They would probably be sooner about laying if left out all day long, but in that case you could not be sure at all about their mating. It is nothing very strange that your young queens are not laying at 12 days old. Often queens do not lay sooner than that when left out all the time, and slower work may be expected when their days are made so short. Besides, it is hardly to be expected that queens will so promptly be fertilized when allowed to fly only at an abnormal time. Still further, there is the chance of failure in a large proportion of cases.

Discouraging Honey Seasons—What Bees Do with Honey

1. Compared with last year this year is discouraging. In 1901 I averaged about 40 marketable sections to the colony, spring count. This year about 4. Does this thing happen often?

2. Can you tell me what the bees do with their honey? Of course they eat it, but something else.

NORTH CAROLINA.

ANSWERS.—1. Your first question set me to looking over the first pages of "Forty Years Among the Bees" (and I want to thank you heartily for your kind words about that book), and I think if you will look over the same ground you will see that my discouragements would fully match yours. I can't tell you just how often you may expect years of failure, but you may as well be ready to shut your teeth together and meet them when they do come. I suspect there are not many places where there are not occasional years of failure. Some years ago the failures came so frequently in this region that it was a serious question whether really good years were not things of the past. There were those who said that the advancing cultivation of the land had killed off some of the sources of honey, and we need never again expect the good old seasons of big harvests. But they did return. Year before last was the best year I ever had, and I think the last 5 years were better than any other consecutive 5 years in my experience. So, keep a stiff upper lip, and have your dish right side up when the "shower" comes.

2. Of course I know what bees do with their honey; they eat it, just as you say, and they—they—well, now, I don't really know what else they do with it, unless they store it up for such vandals as you and me to steal away from them. If you know anything else they do with it, then tell.



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Reports and Experiences

Poor Season for Honey in 1905

I like the American Bee Journal; it is a splendid paper.

I have 35 colonies of bees wintering on the summer stands with roofing-felt tacked around the hives and leaves on top in the super. I have wintered my bees successfully in this way for 3 winters.

The past season was a poor one for honey in this locality. I had about a half crop. I lay with typhoid fever from May 18 to the last of August, and also 4 of my family had the same disease, so my bees had no attention until fall. We had nice fall weather here, and the bees went into winter in good condition. They had a flight this week.

Cloe, Pa., Dec. 24. E. E. WILLIAMS.

Species of Bees—A Correction

I have the American Bee Journal of Sept. 7, 1905 (page 631), and wish to correct some errors that crept into my article which was given to my typewriter in a room in Washington where many were working. I fear I did not review it.

The great bee of the Orient is *Megapis dorsata*, not *Macroapis*. In the same article the common honey-bee is referred to as *Aphis*. This should be *Apis*, of course. *Aphis* is a genus of plant-lice. It is very important that we get these names correct. While *Macroapis* and *Megapis* mean the same thing—big bee—there is no call or excuse for *Macroapis*. Our best authority on bees (Prof. Ashmead) thinks the great bee of the East should be given a distinct generic name, and he is doubtless correct.

In regard to the introduction of the stingless bees, I did not gather that the Government planned to undertake the work. Would it not be well for it to do so? If we think so, let us ask the Department to undertake it. I certainly believe it would be a wise use of money on the part of the Department of Agriculture.

Berlin, Germany.

Poor Year for Bees

Bees did no good here this year. They got a little honey in June, but no fall crop. I think perhaps it was too wet, but I am going to stay here and build my apiary to 150 colonies or more.

Kennett, Mo., Dec. 18.

Big Yield from Carniolans

The editors are making a very commendable effort to find out how to obtain a large yield of honey. Some of my Carniolans did remarkably well, and I have tried to tell my neighbors how I happened to manage them. The big yield was luck, not science. Next year I will try to see if the yield is science instead of luck.

Five or six years ago one colony gave nearly five times the average yield of the colonies of the remainder of the apiary. I could not remember the particulars of the management, so the yield was a streak of luck—nothing more. This time I happened to remember how I managed the colonies that did so well. Thinking that you might be interested in reading the management, result, and inferences, I requested the editor of our local paper to send you a copy of his editorial.

Fresno Co., Calif., Dec. 4.

The editorial from Mr. Abbott's local paper (Irrigator) reads as follows:

A BIG YIELD OF HONEY.

During the season of 1905 a remarkable yield of honey was harvested from a Carniolan

colony of bees in one of the apiaries belonging to O. L. Abbott.

A big yield alone is of little consequence; but when the statement is accompanied by an enumeration of the facts showing the management of the colony during the period of the gathering of the harvest, it becomes of great importance.

We will give the management, the result, and some inferences:

MANAGEMENT—Just as the colony began to hang out in preparation for swarming, Mr. Abbott withdrew two frames of hatching brood with the adhering bees, formed a nucleus, commonly called a "shook swarm," and located it in another apiary. The colony required two full 10-frame supers, in each of which he put 8 empty combs. Every 3 weeks the honey-wagon made a round for extracting. It made 4 trips. During one interval 5 frames of honey had to be withdrawn to make room.

THE RESULT—Each trip the colony furnished 16 full, fat Langstroth frames of honey, making 69 all told. Estimating that each frame yielded 6 pounds, the colony produced 414 pounds of honey. At 4 cents a pound it was worth \$16.56. In addition it yielded one "shook swarm."

INFERENCES—Withdrawing 3 frames of hatching brood just as the bees commenced hanging out preparatory to swarming; checked and held the fever until the main honey-flow absorbed their attention and prevented further effort in that direction.

Extracting often enough to keep them furnished with plenty of storeroom kept them from having idlers to spread discontent.

The wonderful fecundity of the Carniolan queen caused the colony to recover in a few days from the loss of the "shook swarm," and to become and remain strong for the remainder of the season.

Mr. Abbott says that about two dozen other Carniolan colonies treated in the same manner did about two-thirds as well. He has 100 colonies of this race now, and intends to require 400 more with this stock. In gentleness, so far as his knowledge extends, they are surpassed only by the Caucasians.

CONVENTION NOTICES.

Nebraska—The annual meeting of the Nebraska State Bee-Keepers' Association will be held on Wednesday, Jan. 17, at 2 p. m., at the Experiment Station Building of the Nebraska State Farm, at Lincoln, Neb. The meeting will be of interest to all bee-keepers. E. Kretschmer, of Iowa, will read a paper on "Bees and Fruit;" H. F. Smith, Assistant in Department of Entomology of the University of Nebraska, will read a paper entitled, "The Relation of Robber-flies and the Honey-Bee." A general discussion will give all present an opportunity to discuss subjects of interest.

Lincoln, Neb. LILLIAN E. TRESTER, Sec.

Colorado—The Colorado State Bee-Keepers' annual convention will be held in the Chamber of Commerce Building, Denver, Jan. 30, 31, 1906. This will be during "Farmers' Week," when many farmers' organizations will be in the city holding conventions. We are assured of low railroad fares from all points of the State. We are planning for our usual good convention. R. C. ATKIN, Sec.

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OTISVILLE, PA., Jan. 18, 1904.

Dear Sir:—I have tried almost everything in the smoker line; 3 in the last 3 years. In short if I want any more smokers your new style is good enough for me. I thank the editor of Review for what he said of it. Those remarks induced me to get mine.

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A. D. BLOCHER
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spare time, and every member thanked him for getting them to join the Society. **What Mr. Blocher did you can do.** Hundreds of others—men and women—have done nearly as well and are doing it today. Write us and we will explain it all. We will show you just how and why you can do as well or better. This is the opportunity of a lifetime and will only cost you the effort of writing us a postal card to learn all about it; and it will mean very little work on your part to make big money. Besides we will show you how you will profit by your membership in this Society every year as long as you live. Mr. Blocher made \$754.20 in two months, but that was not all the benefits he received—his membership made him a partner in a business that is saving him several hundred dollars every year. Write us a postal for full particulars. Do it now.

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taking the entire output of the factory, and saving all middlemen's profits—co-operation in this Society cuts out all needless expenses and profits between the factory and the member. Send us an order for a National Jump-Seat Buggy at once—\$38.00 is cheap for it. To make the bargain still better, send for an Application Blank, join the Society, and save \$3.80 extra—this extra saving will pay more than one-third the membership fee. Hundreds of members have joined the Society without it costing them a cent—the savings on their purchases paying the full fee and often leaving them a nice profit besides. We solicit you to join the Society now.

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Honey and Beeswax

CHICAGO, Dec. 6.—The trade in best grades of white comb honey has been fair, yet retailers taking only small quantities at a time. This honey brings 14@15c; other grades are difficult to place at from 1@3c per pound less. Extracted selling at 7@7½c per pound for white; amber 6½@7c; dark 5½@6c. Beeswax, when clean and of good color, 30c. R. A. BURNETT & CO.

CINCINNATI, Nov. 24.—The demand for comb honey is relaxing to some extent, owing to the majority of the trade being well supplied. All fears of a comb honey famine have been allayed. We quote fancy white comb honey at 14@16c. Extracted honey is in fair demand. Quote amber at 5½@6½c, according to the package and quality. Fancy white and white clover extracted at 6½@8½c. We are paying 28½c per pound delivered here for choice yellow beeswax. (We wish to call the attention of the producer to the above honey quotations, who mistakably expects to receive these prices for his product. The above are our selling prices.)

THE FRED W. MUTH CO.

TOLEDO, Oct. 17.—The honey market remains firm, with good demand, and prices the same as last quotations. Fancy white comb brings 15c; No. 1, 14c; fancy amber, 13c; buckwheat, 13c. Extracted, white clover, in barrels, 6½@6¾c; amber, in barrels, 5½@5¾c; in cans, 1c to 1½c higher. Beeswax in good demand, 26c cash, 28c trade. GRIGGS BROS.

NEW YORK, Dec. 6.—The demand for comb honey continues to be fair for all grades. Prices practically remain the same. We quote fancy white at 14@15c; No. 1 at 13c; No. 2 at 12c, and buckwheat at 10c per pound. Extracted honey is in good demand, especially California honey with large supplies. We quote white at 6½@7c; light amber at 6c; buckwheat, extracted, at 5½@6c per pound; Southern at 50@60c per gallon. Beeswax firm and steady at 29@30c per pound. HILPRETH & SORLEEN.

INDIANAPOLIS, Dec. 15.—There is a tendency for higher prices on best grades of honey. The demand for strictly fancy white comb honey exceeds the supply. Demand for lower grades of comb honey not good. Numerous shipments

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CINCINNATI OHIO

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of honey arriving, but no one producer seems to have very great quantities to offer. I quote fancy white at 15@16c; No. 1 in poor demand at 12c, and amber dull at 10c. Best grade extracted brings 8@9c in 60-lb. cans; amber slow at 6c. Beeswax, 30@33c. WALTER S. POWDER.

DENVER, Nov. 11.—No. 1 white comb honey, per case of 24 sections, \$3.35; No. 1 light amber, \$3.00; No. 2, \$2.50@3.00. Extracted honey, 6½@7 cts. per pound. Supply is light and we could make quick sales of consignments at above figures. We pay 24c for clean, yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASSN.

CINCINNATI, Dec. 18.—The nice weather holds back the demand for comb honey. Crops seem to be exceedingly short and producers in the West keep the prices high. We quote as follows: Fancy water-white and No. 1 white clover, 14@16c; No. 2, 12@14c. Extracted seems to be more plentiful, and we quote same in barrels, light amber, 5½@5¾c; in cans, ¼c more; white clover, 7@8c. Beeswax, 28@30c.

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